

ABSTRACT OF THE DISCLOSURE

A semiconductor module includes a parts-mounting or packaging substrate, a plurality of power metal insulator semiconductor (MIS) chips which have top surfaces and back surfaces and are mounted by flip chip bonding on or above the package substrate while letting the top surfaces face the package substrate, a drive-use integrated circuit (IC) chip which is mounted by flip chip bonding above the package substrate for driving the gates of metal insulator semiconductor field effect transistors (MISFETs) that are formed on the power MIS chips, a plurality of heat sinks disposed on or above the back surfaces of the power MIS chips, and a resin member for sealing the power MIS chips and the driver IC chip together in a single package.